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Consumer drivers and barriers of WASH products use in rural Ethiopia

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In Ethiopia, the coverage of basic WASH facilities is very low. In response, government of Ethiopia and its development partners have been using sanitation marketing to promote and sell WASH products. Qualitative in-depth interview with households, supply chain actors, and stakeholders were conducted in four regions of Ethiopia to learn about current product use behaviours. The result showed presence of any latrine was related to greater awareness about importance to health. Financial constraints, unavailability of construction materials were major barriers to possession of latrines. Word of mouth was the dominant source of information on WASH products, with health extension workers being a respected source. The major challenges of supply chain actors at district level were finance, inadequate working space, and lack of business development skills. Lack of regular WASH products supply system at community level and lack of profound awareness about health benefit were the priority constraints to access latrines.

Background

Over the last decade, the proportion of households practicing open defecation in Ethiopia reduced from 62% in 2005 (EDHS, 2005) to 32% in 2015 (EDHS, 2016). The same report indicated that the proportion of households with an improved sanitation facility decreased from 6.8% to 6.3%, in the same period. Urban households were more likely to use improved sanitation than rural households (16% versus 4%). Overall; the proportion of households with unimproved sanitation (shared facilities, pit latrine without slab, and open defecation) was 94% (82% in urban and 95% in rural) in 2015. Similarly, household access to clean drinking water increased from 53% in 2005 to 65% in 2015 (EDHS, 2015). Most of these gains were in urban areas, where access is now 97% compared to 57% in rural areas.

Improving handwashing using soap at critical times is a highly effective intervention for reducing communicable diseases, such as diarrhoea. Among households where hand washing practices were observed, 61% percent (43% in urban and 68% in rural) did not have soap, water or another cleansing agent. Both soap and water, the essential hand washing agents, were observed in only 13% (28% of urban households and 7% of rural) households (EDHS, 2016). Anecdotal evidences indicted that availability of handwashing station is likely to facilitate hand washing practices.

To improve access to sanitation facilities over the last decade, many households in Ethiopia constructed latrines by themselves. However, most of the self-constructed latrines did not meet the minimum standards of improved latrines. As a result, the Ethiopian government is promoting sanitation marketing as a way to encourage small and medium enterprises to address sanitation as a business. Guidelines on sanitation marketing were also endorsed by the government in 2013, after which the government and some partners made some initial efforts to work with small and medium-size enterprises (SMEs) to become WASH service providers. However, those efforts were not sustained, and little has been done to work with those SMEs in recent past.

Growth through Nutrition (GtN) is a multi-sector, five-year, (2016 to 2021), USAID-funded nutrition and (WASH) project which supports the government of Ethiopia (GoE) to implement Ethiopia's National Nutrition Program (NNP) and One WASH National Program (OWNP). The OWNP lays out a government-wide approach, supported by NGOs and the private sector, to increase access to improved WASH products

and services and reduce childhood malnutrition. GtN's contribution focuses on creating demand for purchase of latrines and latrine slabs; installation of handwashing stations; and use of point-of-use (POU) water treatment technology.

Save the Children Federation Inc. is the prime recipient of the funding while Population Services International/ Ethiopia (PSI/E) is among the sub- recipients. As part of implementing the project, PSI/E completed this study on consumers and suppliers to identify key drivers and barriers to the use of WASH products and services in rural Ethiopia, so that project interventions would be evidence based.

Methodology

This study used a phenomenological qualitative study design involving various population groups. This design provides in-depth insights of the study target population about their lived experience, belief, feelings, motivations and intentions to use WASH products. The target populations for this study were: product or service consumers at the household level; supply chain actors, including manufacturers and importers of WASH products; financial institutions; and government stakeholders. The study was conducted in 11 Woredas/districts distributed across four large Ethiopian regions (Oromia, Amhara, SNNP and Tigray) that comprise about 85% of the Ethiopian population from April- June 2017. The study received waiver from PSI Institutional Review Board (IRB).

To assess the consumer-level barriers and facilitators of WASH product use, sample rural households were selected based on use/non-use of the products listed in table 1. The sample included households with latrine slabs, with latrines but without a slab, and without a latrine. The sample also included households with and without POU water treatment products, and households with and without a handwashing station. In-depth interviews (IDI) were conducted with a total of 210 (one person per household) purposively sampled female and male respondents (nearly equal in size). Households that fulfilled the selection criteria (type of respondent under table 1) were selected through key informants that lived in the study areas. Back referral by qualified study households was used to identify and select woreda/district level supply chain actors. National and regional level actors were selected purposively. Sample distribution across the four study regions as follows.

Type of respondents by region	Oromia	Amhara	SNNPR	Tigray	Total
Households with latrine slab	12	12	12	6	40
Households having latrine without slab	8	8	8	4	28
Households without latrine	8	8	8	4	28
Households with handwashing station & soap	8	8	8	4	28
Households without handwashing station	8	8	8	4	28
Households using POU water treatment products	8	8	8	4	28
Households not using POU water treatment products	8	8	8	4	28
	60	60	60	30	210

Key informant interviews (KII) were also conducted with 186 people at the national, regional, and woreda/district level. This data is intended to provide knowledge around the availability of WASH suppliers, and opportunities and constraints related to supply and demand of WASH products. The distribution of sample size for key informants is shown in the following table.

Supply chain actors	National	Regional	District	Total
Input suppliers importers/manufacturers/distributors (cement, iron bar, and latrine slab)	8	27		35
Key stakeholders (International Non-Governmental Organizations / INGOs and Ministry of Health/ MoH)	4	4		8
Banks and Micro Finance Institutions/ MFIs	3	11	17	31
Supply chain actors (manufacturers of cement slab, concrete toilet pans, cement ring, and cement bricks; cement retailers; iron bar retailers; sand retailers; gravel retailers; and masons/carpenters)	-	-	71	71
Key stakeholders (Health Extension Workers (HEW), officials from the Small and Micro Enterprise Agency (SMEA), staff from Technical and Vocational Education and Training (TVET), WASH focal person, and health centres)	-	-	41	41
	15	42	129	186

The data collection was completed by trained qualitative interviewers under close supervision of PSI/E researchers and research consultants. Data was transcribed, translated and coded, using NVivo, for key attributes of study participants and topics for analysis (which match the specific objectives identified by PSI/E for exploration). The report was written with set frequency parameters to ensure qualitative data was presented within a context of its generalizability, while benefiting from the rich data provided by interviews.

Key findings

Findings from household level consumers

Almost all (more than 90%) of respondents who owned a latrine with slab and without slab were aware about the health benefits of latrines. The primary reason/motivator for having a latrine was awareness that hygienic practices lead to healthy family life, with a particular emphasis to ensuring children's health. For households who have a latrine with slab and without a slab, latrines were seen as a necessity and tightly linked to positive health outcomes, cleanliness as well as reduction in unpleasant smells. Other reported motivators for having a latrine were; the need for convenience and privacy, influence of health extension workers and other government health officials. . The feeling of shame and embarrassment of defecating in the open field were also cited as a reason. Among households that owned latrine, all members were entitled to use the latrine with no difference by gender and age; while children under five were required to use a potty (bowel shaped device for collecting child excreta). Women were largely responsible for cleaning latrines. Almost all households without latrine reported that they are aware about the benefits of a latrine; however, financial constraint was cited as the main reason (13 households) for inability to build latrines. Some households expressed concern over their physical ability (6 female-headed households) and lack of space (5 households) to construct a latrine. Even though financial constraint was mentioned as the leading reason for not having latrines, households having latrines believed that lack of adequate awareness is likely the underlying explanation. Some households without latrines were hesitant to take a latrine loan to deal with shortage of financial resources due to inability to pay back the loan. Latrine loans were seen as a risk because they don't provide income for repayment. The following quotes demonstrate this situation.

"... I fear to take loan, because if I take and spend it on constructing latrine, but have nothing to payback, it would lead to risk/loss of what I have. I prefer to live without latrine".

Oromia Region, Bale-Gasera Woreda-HH without latrine

All study participants were asked about the type of latrine they would like to have and this varied by the type of latrine they own. Households who already had a latrine were interested in making to the latrine superstructure (roof and wall), making changes to reduce smell, and increasing privacy. On the other hand,

almost all households with a latrine without slab mainly wanted to upgrade their latrine to include slabs. The majority of them also wanted to improve the floor into cement, and walls & roofing.

Households without latrines expressed demand for latrines with deep pits, a cement slab cover, a superstructure with walls and doors, and a handwashing station. The majority of the participants without latrine preferred to have a cement pan, citing the strength of the cement pan and ease of cleaning. On the other hand, a plastic pan was described by a minority of participants. None of the participants wanted to have an open drop pit latrine; a few participants added that a covered drop hole would offer protection against flies and bad odours. Community toilets were not considered as a solution for the majority of the households without a latrine. They reported that community latrines are dirty and not functional, and inconvenient to use.

The majority of participants with a latrine (irrespective of slab ownership), had prior experience of material procurement and visited two to four outlets before they decided to purchase the material of their interest. Households reported that latrine construction materials were 4 to 30 km away from their place of residence; and there were times households required to travel further and visit multiple stores to find missing materials. They reported this as adding to their expense. The main driver of purchase decision is price rather than material quality for households having latrine of any type. There is no service provider to bring all of the materials to the house; and for almost all households, household members physically install their own latrine.

Despite participants reported demand for latrines, the cost of constructing a latrine is perceived as very expensive for participants without latrine. The majority of those without a latrine do not appear willing to pay, even partially, for construction materials. A majority of households without latrines defecated in open areas, such as backyard, farm lands, and/or in the woods.

The majority of the handwashing stations observed among households were made of repurposed bottles, containers, or plastic jerrycans. Only few of them reported having a standard handwashing station secured freely or bought from the market.

The principal reason for having a handwashing station was to improve health and/or prevent diseases. The majority of the households without a handwashing station demonstrated general knowledge about the importance of the station. However, most seemed to lack the knowledge to re-purpose materials available in the community, such as used plastic edible oil containers or used water bottles.

More than half of the households with handwashing stations practiced (including household members) hand washing using soap after and/or before meal and after using the latrine. The practice was reported among some households without stations. All respondents with and without handwashing station were aware of the importance of using soap. Even though soaps were available in community retail shops, the majority reported buying soaps on market days of nearby towns for lower a price compared to community retail shops.

The majority of households with a handwashing station spent very little cash or none on establishing the station. Only a few bought or received the materials as gifts from others. For those who paid to establish a handwashing station, the cost varied depending on the type of material used, with an average price ranging from six Birr (≈ 0.2 USD) to 200 Birr (≈ 7 USD). The majority of the respondents without a handwashing station perceived a station to be a material that is bought from town markets or provided by government.

Word of mouth is the most common source of information for new products and services among households with and without handwashing stations. However, television advertisement was the most trusted source of information followed by word of mouth, radio, and market observation.

Majority of respondents at household were aware of the importance of treating water and treatment methods (chemical, boiling, and filtering). Almost all respondents who use POU water treatment products know of chemical water treatment methods. Wuha-Agar (Water-Guard) was the most known brand. However, very few of those who did not use POU water treatment know chemical methods. Boiling was the most known method among these respondents.

Most users of chemical treatment get the products through HEWs especially during the occurrence of acute watery diarrhoea outbreaks. HEWs were the main drivers of both brand and product awareness of water treatment chemicals and water filters. They positively influenced household decision making concerning WASH products. The desire to be free from diseases – especially from waterborne diseases – is the driving factor.

For households using water treatment chemicals, unavailability of products in the market was the main barrier. In contrast, among non-users, the reported barrier was lack of awareness about the existence of chemicals to treat water.

Findings from research with WASH suppliers

The study identified a variety of actors at the national, regional, and woreda level that import, manufacture, or produce latrine components. There were sufficient number of cement producer to cover the local market need at national level. However, there were times when local producers and importers of iron bar were unable to supply enough to meet the demand of consumers. Most of the latrine slab/cement ring manufacturers/importers produced/imported latrine slabs on demand. Regional level actors produced latrine slabs from cement and/or marble and distributed/supplied cement and/or iron bars. The majority of manufacturers at Woreda/district level produced bricks, cement rings, and slabs. Retailers of cement and iron bar were outlets that stocked and sold different construction materials in smaller amounts. Sand and gravel retailers were usually found around the sources in the outskirts of towns. Masons/carpenters were service providers involved in the construction of latrines.

There was a high variation in annual revenue from the sale of sanitation products among supply chain actors. For woreda/district level actors, annual revenue ranged from Birr 9,500 (USD 350) to 4 million (USD 145, 460). This variation among actors is mainly due to differences in the amount of capital invested in creating sanitation business. The share of sanitation products revenue from the total revenue ranged from 1% to 75%. Shortage of transport trucks, poor roads and distance to consumer were the primary factors that increased cost of products mostly born on the consumer. The most common costs considered in price setting were costs of raw materials, labour, transportation, electricity and water, competitors or market price, and possible waste of materials during production.

Cash payment was the dominant mode of payment to purchase products from the supply chain actors. Credit and discounts were offered by a majority of the supply chain actors to consumers, but was subjective and depended on criteria. Business and/or personal relationship, government employment and being a government agency were considered as eligibility criteria to receive credit.

All manufacturers and retailers are supposed to pay an annual income tax and were either registered for VAT (Value Added Tax) or ToT (Turnover tax). Retailers of sand and gravel collected additional mining tax for the bureaus of Mines and Energy. In order to get certification from the government, some service providers registered with the government and thus paid tax. Otherwise, they worked without certification and did not pay tax. The majority of manufacturers agreed that paying tax did not affect the price of products. However, the minority of retailers reported being undercut in price by those who did not pay tax.

The government occasionally provided training for manufacturers of cement slabs/bricks which helped them maintain the quality and standard of their products. They also received trainings in areas of business management and sustainability. The majority of the retailers never received business guidance/advice from the government. Service providers (masons and/or carpenters) never received any business guidance/advice from the government. The government does not impose quality standards on the retailers of cement/iron bar/sand/gravel, except at times to check counterfeit products.

The major challenges of supply chain actors at woreda/district level were finance and working space. The other challenges were electricity interruption, lower market demand, and shortage of raw materials. Regarding enabling environment, there were no key rules that limited business growth, except that a few manufacturers were not allowed to produce bricks in town and were also not provided land outside of town.

Half of the businesses at regional and woreda/district levels relied largely on business cards to promote themselves. Billboards, brochures, and posters were also served as promotional items.

The financial sector has been growing very fast over the past 5 years. Over the period, financial institutions (banks and micro-finances institutions) opened new branches and adopted new technologies. Financial institutions extended business loans, yet they did not have loans specifically designed for businesses engaged in sanitation. The major sources of consumer loans were microfinance (though most of these institutions considered such loans as having low value addition). Banks only extended consumers loans for their employees and employees of their biggest clients. There was some interest among financial institutions to collaborate with stakeholders along the supply chain to provide an integrated sanitation solution. However, it was noted that the business case should be sound and that stakeholders; such as INGO and MoH should be able to provide support including finance.

Stakeholders noted that their contributions were primarily in awareness creation on sanitation, POU and hand washing. They did not assist the lowest level of the supply chain: where suppliers meet consumers and transactions occur. The majority of the stakeholders perceived that households would demand latrine slabs, plastic made handwashing stations, POU water treatment chemicals, water filters, and soap from WASH service centres if they will exist in their locality or nearby town. The majority of stakeholders recommended partnering WASH service centres with local construction materials shops and distributors (including shops

organized under micro and small enterprises), pharmacies, and masons/carpenters. They advocated locating the container for handwashing station at woreda/district towns to make them accessible to all surrounding Kebeles (lowest administrative units).

Conclusions and recommendation

Although households without latrines felt that they understood the importance of latrines, they were not moved to construct due to financial constraints and lack of awareness. Thus, provision of latrine inputs at subsidized cost through government and development partners integrating with communication to households and communities should continue to be stressed. Further, health educations with emphasis on the positive health outcomes and the potential negative consequences could be helpful for households and communities to internalize the health benefits.

- Personalized assistance for those without latrines should be considered. Female headed households should be targeted for specialized assistance for latrine construction;
- Utilize the HEW system, which is reported to successfully influence household decision making around latrine construction and utilization. They were already well-liked and perceived as professionals in the communities they serve. Word of mouth campaigns (either through HEWs and/or community members) were likely to be the most effective way for targeting those currently practicing open defecation. HEWs being a respected source of information, they should be capacitated to disseminate messages about latrines;
- Financial assistance or cost-sharing could help to overcome the financial challenge associated with constructing latrines. Building partnership and collaboration with financial institutions particularly with microfinances to establish a platform that help avail affordable latrine loans is important. Considering providing business development skills to supply chain actors at woreda/district level. Supporting slab manufacturers with improved slab designs and improve their skills through training; and
- There is great room for awareness building around POU water treatment products – especially among those who do not use the products. In order to boost continuous utilization of POU water treatment products, create a mechanism which ensures availability and regular supply at local community level.

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